biliary stent as a method for repair of arterial injury [pseudoaneurysms, arterial rupture, arteriovenous (AV) fistulae]. Four of five arterial lesions (2 pseudoaneurysms, 1 AV fistula, 1 of 2 ruptured coronary arteries) were repaired percutaneously, utilizing a Palmaz™ stent covered with the patient's harvested intact cephalic vein. The stent was inserted into the intact cephalic vein, balloon expanded to 3 mm, and one end of the vein was fixed to the stent with fine suture. The vein was pulled taut, and secured with suture at the opposite end. The covered stent was placed and secured onto a balloon catheter, and delivered to the arterial injury site (popliteal, axillary, or coronary arteries). Four procedures were successful and without incident; the lone failure was due to the inability of the covered stent to negotiate the acute angle of entry into the circumflex coronary artery, which was subsequently occluded by coil embolization. Followup angiograms (at 6–12 months), and/or ultrasound data have demonstrated that all vessels were patent and repaired.

Conclusion: These data indicate that autologous vein may be an effective, safe, simple, expandable, impermeable stent covering which allows correction of a myriad of arterial injuries.

5:15

770-6 Urinary and Circulating Markers of Endothelial Dysfunction in Essential Hypertensives With Atherosclerotic Vascular Disease

Raffaele De Caterina, Guido Lazzerini, Roberto Petrucci[1], Franco Carmassi[2], Giosue Catapano[2], Giulia Dell'Omo[2], Roberto Pedrinelli[2]. *Institute of Clinical Physiology, Pisa, Italy;* [2] *Clinica Medica, Pisa, Italy;* [1] *Radiologia, Pisa, Italy*

Endothelial dysfunction precedes and accompanies the development of atherosclerosis. In search for markers of endothelial dysfunction and atherosclerosis in hypertensive patients, the plasma concentrations of the soluble(s) adhesion molecules ICAM-1 and VCAM-1 (ng/ml, EIA), and urinary albumin excretion (UAE, μg/min, nephelometry; an average of three 12-hr overnight collections) were assessed in 11 male essential mild-moderate essential hypertensives (age: 59 ± 8, BP: 156 ± 14/93 ± 11) without diabetes, obesity and renal insufficiency (s-creat < 1.2 mg/dl) and with clinical, angiographically confirmed evidence of ileo-femoral atherosclerotic Fontaine's stage II peripheral vascular disease (*EH + Ath*). EH-Ath were compared with 11 sex-matched uncomplicated essential hypertensives (*EH*) of comparable age (56 ± 9) and BP (151 ± 10/97 ± 9) without atherosclerotic disease, and 11 normotensive controls (*Contr*, age: 57 ± 9, BP: 134 ± 9/80 ± 10). The maximum intima-media thickness (IMT max) value at the far wall of either carotid bifurcation (mm, high-resolution B-Mode ultrasonography) was taken as an independent index of systemic atherosclerotic involvement. Results (means ± SD or medians with range for asymmetricaly distributed data) were

	IMT max	UAE	s-VCAM-1	s-ICAM-1
EH + Ath	2.6 ± 0.8*	27.3 (8–144)	998 (273–1808)*	428 (301–546)
EH	1.2 ± 0.4	10.4 (6.5–19)	340 (236–975)	296 (205–630)
Contr	1.1 ± 0.4	13.3 (6.1–20)	386 (204–821)	317 (202–405)

*p < 0.01 vs EH and Contr

In the group as a whole, UAE and s-VCAM-1 values were interrelated (r = 0.49, p < 0.01, n = 33). Both parameters (s-VCAM-1, r = 0.62, p < 0.0001; UAE: r = 0.52, p < 0.001, n = 33) showed a statistically significant positive correlation with IMT max values. Thus, UAE and s-VCAM-1 were elevated in atherosclerotic hypertensives and correlated with the extent of carotid atherosclerosis. The data suggest that the abnormal values of the two indices are related to the underlying atherosclerotic disease and/or endothelial dysfunction.

771 Risk Factors in Coronary Disease

Tuesday, March 26, 1996, 4:00 p.m.–5:30 p.m.
Orange County Convention Center, Room 414C

4:00

771-1 Long-Term Survival in Blacks Versus Whites With Coronary Artery Disease (CAD)

Eric D. Peterson, Linda K. Shaw, Elizabeth R. DeLong, Charlotte L. Nelson, Lawrence H. Muhlbaier, Daniel B. Mark. *Duke University Medical Center, Durham, NC*

Little information is available regarding the prognosis of CAD in blacks. We examined racial differences in long-term survival among 12,402 consecutive patients (10.3% black) who were found to have significant CAD (≥ 75% stenosis in ≥ 1 major coronary artery) at initial diagnostic cardiac catheterization (Cath) from 3/84 to 12/92. Compared with whites, blacks with significant CAD were more likely to be younger, female, hypertensive, diabetic, or have a prior MI. The duration from symptom onset to Cath was shorter in blacks than whites (median 2.8 vs. 4.0 months, p < 0.01). At Cath, blacks and whites had similar rates of 2-vessel (32 vs. 30%) and 3-vessel disease (32 vs. 33%), both p > 0.05. Blacks, however, had slightly lower ejection fractions (median 50 vs 52%, p < 0.01).

Unadjusted 5-yr survival was significantly lower in blacks with CAD compared with whites (74 vs. 81%, p < 0.01). After adjustment for age, anginal and CHF symptoms, acute MI, comorbidity coronary anatomy, mitral valve disease, and left ventricular function using a Cox survival model, blacks continued to have a significantly worse long-term prognosis: adjusted black/white risk ratio 0.80 (95% confidence interval 0.70–0.91).

Conclusion: Despite similar initial disease severity, the long-term prognosis in blacks with CAD was worse than whites. Known risk factors only partially account for these differences. Other factors (including non-medical ones) may play an important role in the outcomes of black CAD patients.

4:15

771-2 Changes in Coronary Heart Disease Risk Factors Associated With Menopause

Wendy S. Post, Martin G. Larson, Peter W.F. Wilson. *The Framingham Heart Study, Framingham, MA*

We studied changes in coronary heart disease risk factors associated with natural menopause. Women in the Framingham Offspring Study were eligible if they were premenopausal at the baseline exam, between 40 and 57 years old at the follow-up (F/U) exam 8 years later, not receiving estrogen replacement, and free of surgical menopause. There were 610 women eligible: 428 (70.2%) remained premenopausal (PRE) at F/U, and 182 (29.8%) underwent natural menopause (POST). The mean age at baseline was 37.3 years in the PRE group and 44.5 years in the POST group. There was an increase in body mass index and hypertension, and a decrease in cigarette smoking during F/U, which did not differ significantly between the two groups, after adjusting for age and other selected variables. Mean changes in lipids during F/U (and mean baseline values) are presented below (in mg/dl), after adjusting for age, body mass index, cigarette smoking, and other selected variables.

	Total CHOL	LDL CHOL	HDL CHOL	LDL/HDL	Trig
PRE	+10.4 (190.8)	+8.8 (118.8)	−3.2 (57.2)	+0.30 (2.27)	+17.1 (86.6)
POST	+24.9 (192.2)	+22.9 (117.4)	−0.9 (57.6)	+0.42 (2.20)	+19.7 (70.0)
*	p < 0.0001	p < 0.0001	p = 0.06	p = 0.17	p = 0.63

*p = significance of difference between groups.

There was a greater increase in total cholesterol (CHOL) and LDL CHOL in the POST women. Although there was a small decrease in HDL CHOL in both groups during F/U, it was not associated with menopause, per se. Changes in LDL/HDL and triglyceride were not significantly associated with menopause. In conclusion, the elevated risk associated with menopause is partially explained by an increase in LDL cholesterol, but is not due to changes in triglyceride, body mass index, or hypertension. In addition, contrary to previous reports, there is no decrease in HDL CHOL associated with menopause.

4:30

771-3 Factor VIIc Activity and Arteriographically Defined Coronary Artery Disease: Significant Associations in African Americans and Women

Henry F.C. Weil, Russell P. Tracy, Edward F. Philbin, Paul Jenkins, Charles K. Francis, Thomas A. Pearson. *M.I. Bassett Research Instit., Cooperstown, NY; Harlem Hospital Center, New York, NY*

Hemostatic factors (fibrinogen, Factor VIIc activity, and plasminogen activator inhibitor-1 (PAI-1) have been associated with coronary artery disease (CAD) in white males, but little is known about their association with objectively defined CAD in African Americans (AA) and women. To study this, we measured CAD risk factors, including hemostatic factors and serum lipids and lipoproteins, in 317 male (M) and female (F) patients undergoing coronary arteriography for suspected CAD, comparing levels between those with (cases) and without (controls) at least one coronary stenosis > 50%. There were no associations between CAD and fibrinogen or PAI-1 levels. However, Factor VIIc levels (as a % of normal) were consistently different between cases and controls:

	AAM	AAF	White M	White F
N	84	61	114	58
Case	93.4	120.6	93.5	113.3
Control	77.0	98.7	86.3	90.7
P	0.025	0.029	0.27	0.018

TUESDAY ORAL